REMARKS/ARGUMENTS

Reconsideration of the subject application, as amended, is respectfully requested.

Claims 1-11, and 13-20 are pending in the subject application. Claims 1, 2 and 3 are independent claims. Claims 1, 2 and 19 have been amended as follows:

Claims 1, 3 and 19 have been amended to correct typographical errors in certain recited terms in the recited formula and term definitions. More specifically:

(1) closing parentheses have been inserted in the subscripts for the terms

$X_{(x-1,y-1}$

$X_{(x,y-1}$

$X_{(x+1,y-1}$

(2) a subscripted closing parenthesis has been substituted for a non-subscripted parenthesis in the term

$X_{(x-1,y-1}$

(3) a closing parenthesis has been inserted for the term

$QE(X(x,y-1)$

Claim 1 also has been amended to recite that "the gamma correction circuit provides an m-bit corrected video signal", to recite that a coarse adjustment of the quantization is made in the first random-access memory "to provide an n-bit coarse quantization adjustment", to recite that a fine adjustment of the quantization is made in the second random-access memory "to provide an n-bit fine quantization adjustment", to recite that "m>n", and to recite "an n-bit"

pixel value. Support for these amendments can be found, for example, in Fig. 5, and in paragraphs 005 and 0042 of the subject specification.

Claim 2 also has been amended to recite that the first random-access memory is "addressed using the most significant bits" and to recite that the second random access memory is "addressed using the least significant bits." Support for these amendments can be found, for example, in Fig. 6 and paragraphs 0043 through 0046 of the subject specification.

Claim rejections:

The Examiner has rejected claim 2 under 35 USC 103(a) as unpatentable over Van Dalfsen et al. (US 2001/0005186 A1) in view of Kwak et al. (USP 6,166,781).

The Examiner has rejected claims 1, 3, 5, 7, 17, 19 and 20 under 35 USC 103(a) as unpatentable over Van Dalfsen et al. (US 2001/0005186 A1) in view of Kwak et al. (USP 6,166,781), further in view of Tabata et al. (USP 6,342,950 B1).

The Examiner has rejected claims 4 and 6 under 35 USC 103(a) as unpatentable over Van Dalfsen et al. (US 2001/0005186 A1) in view of Kwak et al. (USP 6,166,781) and of Tabata et al. (USP 6,342,950 B1), and further in view of Okada et al. (USP 5,854,799).

The Examiner has rejected claims 8-11 under 35 USC 103(a) as unpatentable over Van Dalfsen et al. (US 2001/0005186 A1) in view of Kwak et al. (USP 6,166,781) and of Tabata et al. (USP 6,342,950 B1), and further in view of Lengyel (USP 5,6,614,428 B1).

The Examiner has rejected claims 13-16 and 18 under 35 USC 103(a) as unpatentable over Van Dalfsen et al. (US 2001/0005186 A1) in view of Kwak et al. (USP 6,166,781) and of Tabata et al. (USP 6,342,950 B1), and further in view of Adachi et al. (US 2004/0081266 A1).

Applicant respectfully traverses the Examiner's rejections of the claims.

In each of the above rejections, the Examiner relies in part upon the combination of Van Dalfsen and Kwak. In applying the Kwak reference to the

claims, the Examiner appears to be interpreting "quantization" to mean "adjustments", namely

> However, the arguments to Claim 2 are, respectfully, not persuasive. Applicant argues that quantizing is not being done. However, there are indeed adjustments being made in the two LUTs (please note the adder and multiplier) and this is being combined with Van Dalfsen to arrive at the claimed language.

(See Non-Final Action of March 18, 2010, "Response to Applicant's Arguments," p. 16, emphasis added.)

It is respectfully submitted that it is not a reasonable interpretation to equate the term "quantization" or "quantizing" with the concept of "adjustments". Such an interpretation is overly broad in light of the usage of the term "quantization" in the subject application, as well as in light of dictionary definitions. More specifically, in the subject specification, paragraphs 0002, 0005 discuss a "quantization process" as reducing the number of bits in luminance data applied to a display panel. Paragraphs 0043 through 0046, and Fig. 6, provide an example of the result of quantization of an input of m-bits, e.g. 12-bits, in which an MSB random-access memory outputs values in "steps of ten", and an LSB random-access memory outputs values in "steps of one." Both Figs. 5 and 6 of the subject application, reproduced below, show a reduction of an m-bit input signal to an n-bit quantized signal.

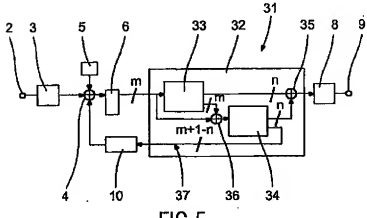


FIG.5

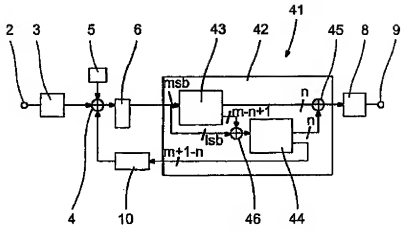


FIG.6

Dictionary definitions for "quantize" also do not support the Examiner's apparent equating of "quantizing" with "adjustments". For example, The Computer Desktop Encyclopedia, 1999, p. 754, attached, defines "quantize" as

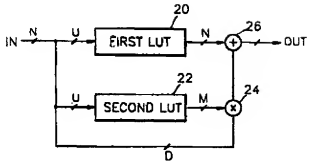
> "(1) The division of a range of values into a single number, code or classification. For example, class A is 0 to 999, class B is 1000 to 9999 and class C is 10000 and above."

Webster's New Collegiate Dictionary, 2005, p. 1173, attached, defines "quantize" as :

> 1 Math, to express in multiples of a basic unit"

In light of the proper interpretation of "quantize" or "quantization," it is respectfully submitted that Kwak's teaching does not involve or suggest a "quantization" of the input signal, but instead involves a "correction" of the input signal that does not result in a quantization of the signal. The result of such correction is an output signal that has the same number of bits as the input, and not a reduction of the number of bits. Specifically, Fig. 2 in Kwak, reproduced below, shows an input signal that has N-bits and a corrected output signal that has N-bits.

FIG. 2



Further, Kwak describes at col. 2, lines 23-41, how an N-bit input signal is corrected to provided an N-bit digital corrected signal. (See also, col. 3 lines 9-12; col. 5, lines 21-29.)

It is therefore respectfully submitted that Kwak teaches the correction of a signal and does not teach a quantization of a signal, and that it would therefore not be obvious to apply the teachings of Kwak to provide the modifications to Van Dalfsen as asserted by the Examiner.

It is respectfully submitted that Van Dalfsen's disclosure only identifies a quantizer 304, Fig. 3. Van Dalfsen does not disclose splitting a quantizer into two quantizers, nor is there any disclosure of implementing a quantizer in a memory. Thus, it is respectfully submitted that the disclosure of a "quantizer" in Van Dalfsen, and the disclosure of a "correction" process in Kwak that results in a corrected output signal having the same number of bits as the input signal, does not make obvious the inventions recited in independent claims 1, 2 and 3.

Claim 2 has been amended to recite that the most significant bits are quantized in a first random-access memory "addressed using the most significant bits" and that the least significant bits are quantized in a second random-access memory "addressed using the least significant bits, to further clarify the operations being performed in the first and second random access memories. In contrast, Kwak does not address its second LUT with least significant bits, but

instead Kwak's second LUT is addressed with bits U – the upper bits. (See Kwak, Fig. 2, col. 5, lines 15-20, for example.)

Claim 1 has been amended to more specifically recite that for an m-bit corrected video signal, the coarse and fine quantization adjustments made in the first and second random-access memories, respectively, provide n-bit quantization adjustments, where m > n. In contrast, as discussed above, Kwak discloses a correction of an input signal which results in an output which has the same number of bits as the input signal.

Thus, even if Van Dalfsen were combined with Kwak, the resulting combination would not meet claims 1, 2 or 3. It is therefore respectfully submitted that independent claims 1, 2 and 3 are allowable over the cited references.

It is also respectfully submitted that dependent claims 4-11 and 13-20, as ultimately dependent from allowable claims 1, 2 or 3, are also allowable.

Information Disclosure

Included with this response is an Information Disclosure Statement which lists references cited in the International Search Report that was filed on February 17, 2005 as a part of the documents submitted for the subject application under 35 USC 371.

Conclusion

In view of the above, it is respectfully submitted that the application is now in condition for allowance. The Examiner's reconsideration, further examination, and indication of allowance of the subject application, are respectfully requested.

Respectfully submitted,

DLA Piper LLP (US)

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By: /Gerald T. Sekimura/
Gerald T. Sekimura
Reg. No. 30,103
Tel.: (415) 836-2500

Attn.: Patent Department
DLA Piper US LLP
555 Mission Street, Suite 2400
San Francisco, CA 94108-2933